Grass and Forage Science

EDITED BY O. R. JEWISS

VOLUME 54, 1999

The Journal of the British Grassland Society
The Official Journal of the European Grassland Federation
published by Blackwell Science
Oxford London Edinburgh Boston
Melbourne Berlin Paris Vienna Tokyo

© 1999 Blackwell Science
23 Ainslie Place, Edinburgh EH3 6AJ
25 John Street, London WCIN 2BL
Osney Mead, Oxford OX2 0EL

Blackwell Science Asia Ltd, 54 University Street (PO Box 378), Carlton South, Victoria 3053, Australia
Blackwell Science France, 10 rue Casimir Delavigne, 75000, Paris, France
Blackwell Wissenschafts-Verlag GmbH, Kurfürstendamm 57, 10707 Berlin, Germany
Blackwell Science KK, MG Kodenmacho Building, 7-10 Kodenmacho Nihombashi, Chuo-ku, Tokyo 104, Japan
Blackwell Science Inc, Commerce Place, 350 Main Street, Malden, MA 02148-5018, USA

Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by Blackwell Science for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of $14.00 per copy is paid directly to CCC, 222 Rosewood Drive, Suite 910, Danvers, MA 01923, USA. Special requests should be addressed to the Editor. 0142-5242/99 $14.00

The Blackwell Science logo is a trademark of Blackwell Science Ltd, registered at the United Kingdom Trade Marks Registry.

ISSN 0142-5242

Typeset in Madras, India, by SPS Ltd.
Printed in Great Britain by Whitstable Litho, Whitstable, UK

Contents of volume

Volume 54, Number 1, March 1999

1 *T. H. Blackstock, C. A. Rimes, D. P. Stevens, R. G. Jefferson, H. J. Robertson, J. Mackintosh and J. J. Hopkins*
The extent of semi-natural grassland communities in lowland England and Wales: a review of conservation surveys, 1978–96

19 *R. L. M. Schils, Th. V. Vellinga and T. Kraak*
Dry-matter yield and herbage quality of a perennial ryegrass/white clover sward in a rotational grazing and cutting system

30 *L. Wu and M. B. McGechan*
Simulation of nitrogen uptake, fixation and leaching in a grass/white clover mixture

42 *K. A. B. Logan and R. J. Thomas*
Interactions between N supply and N uptake by perennial ryegrass, ^{15}N recovery and soil pH for four acid Scottish soils

52 *P. Martiniello*
Effects of irrigation and harvest management on dry-matter yield and seed yield of annual clovers grown in pure stand and in mixtures with graminaceous species in a Mediterranean environment

62 *W. M. Kelman, R. N. Oram and J. E. Hayes*
Characterization, establishment and persistence under grazing of nitrous oxide-induced octoploid *Phalaris aquatica* L.

69 *J. S. Bailey and A. S. Laidlaw*
The interactive effects of phosphorus, potassium, lime and molybdenum on the growth and morphology of white clover (*Trifolium repens* L.) at establishment

77 *R. A. Byers, C. C. Bahler, W. L. Stout, K. T. Leath and L. D. Hoffman*
The establishment of alfalfa into different maize residues by conservation-tillage and its effect on insect infestation

87 *M. Wachendorf, B. Ingwersen and F. Taube*
Prediction of the clover content of red clover- and white clover-grass mixtures by near-infrared reflectance spectroscopy (Research Note)

91 *I. Zabalgogeazcoa, B. R. Vázquez de Aldana, B. García Criado and A. García Ciudad*
The infection of *Festuca rubra* by the fungal endophyte *Epichloë festucae* in Mediterranean permanent grasslands (Research Note)

Volume 54, Number 2, June 1999

97 *E. L. Leafe*
Dr E. K. Woodford – an appreciation

99 *J. R. B. Tallowin and R. G. Jefferson*
Hay production from lowland semi-natural grasslands: a review of implications for ruminant livestock systems

116 *D. A. McGilloway, A. Cushnahan, A. S. Laidlaw, C. S. Mayne and D. J. Kilpatrick*
The relationship between level of sward height reduction of a rotationally grazed sward and short-term intake rates of dairy cows

127 *Z. N. Nie, D. J. Barker, I. Valentine, A. D. Mackay and J. Hodgson*
Changes in the population of germinated seed in a hill pasture during and after a pastoral fallow

137 *Li Fengrui*
Severity of damage to *Trifolium repens* leaves by certain invertebrate species in mixed perennial ryegrass/white clover swards: response to cultivar, cutting frequency and sward characteristics

144 *J. P. Frost and R. C. Binnie*
The effect of mechanical treatment on the drying rates of Italian and perennial ryegrasses

155 *G. C. Lewis and R. O. Clements*
Effect of combined insecticide and fungicide treatments on newly sown swards of Italian and perennial ryegrass using two methods of sowing, two rates of seed and N fertilizer, with and without herbicide

163 *A. Hopkins, R. F. Pywell, S. Peel, R. H. Johnson and P. J. Bowling*
Enhancement of botanical diversity of permanent grassland and impact on hay production in Environmentally Sensitive Areas in the UK

174 *H. D. Karsten and G. W. Fick*
White clover growth paterns during the grazing season in a rotationally grazed dairy pasture in New York

184 *G. Colombari, G. Borreani and G. M. Crovetto*
Comparison of lucerne silage and ventilated hay in maize silage-based rations for dairy cows for the production of milk destined for Grana cheese

Volume 54, Number 3, September 1999

195 *J. Schellberg, B. M. Möseler, W. Kühbauch and I. F. Rademacher*
Long-term effects of fertilizer on soil nutrient concentration, yield, forage quality and floristic composition of a hay meadow in the Eifel mountains, Germany

208 *P. M. Haigh*
Effluent production from grass silages treated with additives and made in large-scale bunker silos

219 *S. Akhter, E. Owen, M. K. Theodorou, E. A. Butler and D. J. Minson*
Bovine faeces as a source of micro-organisms for the *in vitro* digestibility assay of forages

227 *J. M. Wilkinson, J. Hill and J. D. Leaver*
Effect of swath treatment on water loss during field-wilting and on feeding value of perennial ryegrass silage

237 *L. E. R. Dawson, C. P. Ferris, R. W. J. Steen, F. J. Gordon and D. J. Kilpatrick*
The effects of wilting grass before ensiling on silage intake

248 *C. J. Watson and P. Poland*
Change in the balance of ammonium-N and nitrate-N content in soil under grazed grass swards over 7 years

255 *I. Calvière and M. Duru*
The effect of N and P fertilizer application and botanical composition on the leaf/stem ratio patterns in spring in Pyrenean meadows

267 *J. M. Van Huylenbroeck, P. Lootens and V. Van Bockstaele*
Photosynthetic characteristics of perennial ryegrass and red fescue turf-grass cultivars

275 *R. S. Shiel, A. M. A. El Tilib and A. Younger*
The influence of fertilizer nitrogen, white clover content and environmental factors on the nitrate content of perennial ryegrass and ryegrass/white clover swards

286 Book Review

Volume 54, Number 4, December 1999

287 *A. J. Golightly*
James Kenneth Nelson – an appreciation

289 *H. Pérez, S. Bravo, V. Ongaro, A. Castagnaro, L. García Seffino and E. Taleisnik*
Chloris gayana cultivars: RAPD polymorphism and field performance under salinity

297 *P. C Chiy and C. J. C. Phillips*
Sodium fertilizer application to pasture. 8. Turnover and defoliation of leaf tissue

312 *P. C. Chiy, J. A. Avezinius and C. J. C. Phillips*
Sodium fertilizer application to pasture. 9. The effects of combined or separate applications of

sodium and sulphur fertilizers on herbage composition and dairy cow production

322 *A. Hameleers, K. A. Leach, N. W. Offer and D. J. Roberts*
The effects of incorporating sugar beet pulp with forage maize at ensiling on silage fermentation and effluent output using drum silos

336 *R. Lindner, M. Lema and A. García*
Ecotypic differences and performance of the genetic resources of cocksfoot (*Dactylis glomerata* L.) in north-west Spain

347 *A. Hernández Garay, C. Matthew and J. Hodgson*
Tiller size/density compensation in perennial ryegrass miniature swards subject to differing defoliation heights and a proposed productivity index

357 *E. D. Ungar and N. Ravid*
Bite horizons and dimensions for cattle grazing herbage to high levels of depletion

365 *B. Cagaš, M. Flieger and J. Olšovská*
Concentration of ergot alkaloids in Czech ecotypes of *Lolium perenne* and *Festuca pratensis* (Research Note)

371 *Y. Y. Xu, J. F. Jia, J. B. Wang and B. T. Niu*
Changes in isoenzymes and amino acids in forage and germination of the first post-flight generation of seeds of three legume species after space flight (Research Note)

376 Author Index
379 List of Referees
380 BGS Council 1999–2000